REMARKS

Claims 1-15 and 33-47 were pending in this application, with claims 16-32 withdrawn from consideration. By way of this amendment and reply to the Office Action mailed December 5, 2001, claims 1, 3, 33 and 46 have been amended. Please note that the amendments to claims 1, 33 and 46 are not believed to have narrowed the scope of those claims. The amendments made to claims 1, 33 and 46 have been made to provide clear antecedent basis for terms in those claims, as well as to fix some grammatical problems with claim 46. Accordingly, Applicants submit claims 1-15 and 33-47 for reconsideration.

In the Office Action dated December 5, 2001, claims 1-6, 10-13 and 15 were again rejected under 35 U.S.C. § 103(a) as being unpatentable over Jahnke et al. (U.S. Patent 5,345,756) in view of Rice (U.S. Patent 4,571,935); claims 7 and 14 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Jahnke et al. in view of Rice, and further in view of Perkins et al. (U.S. Patent 5,160,096); claims 8 and 9 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Jahnke et al. in view of Rice, and further in view of Iwata et al. (U.S. Patent 5,327,718); and claims 33-39 and 42-47 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Jahnke et al. in view of Rice, and further in view of Perkins et al.; and claims 40 and 41 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Jahnke et al. in view of Rice, and further in view of Perkins et al. and further in view of Iwata et al. These rejections are traversed for at least the reasons given below.

With respect to claim 1, the Office Action correctly recognizes that Jahnke et al. fails to disclose supplying steam from a heat exchanger in a gasification system to more than one section of a gas turbine. The Office Action incorrectly asserts that Rice discloses this feature. Rice discloses a high pressure steam turbine 38 that provides steam to cool a section of a gas turbine, and an intermediate pressure steam turbine 40 that provides steam to cool another section of the gas turbine. Rice also discloses a low pressure steam turbine 42 that provides steam to a condenser 46, whereby water is output from the condenser 46 and then is supplied to a different section of the gas turbine, and is fed to a boiler feed water heater 48. See Figure 1 and column 10 of Rice.

Claim 1 recites that water is heated to steam in a coal gasification system, whereby the steam from a heat exchanger in the coal gasification system is supplied to more than

one high-temperature section of a gas turbine system which are at a temperature higher than a temperature of the steam from the heat exchanger.

When combining the teachings of Rice with Jahnke et al., one of ordinary skill in the art cannot ignore the feature of the low pressure steam turbine 42 and the condenser 46 providing water to a boiler feed water heater 48, whereby lower pressure steam output from the low pressure steam turbine 42 is used to cool an exhaust portion of a power turbine in Rice's system (see Abstract). While it is true that steam turbines 38 and 40 provide steam directly to different portions of Rice's gas turbine, when one of ordinary skill in the art combines the teachings of Rice with those of Jahnke et al., that person would understand that such a combined system would directly supply steam from a steam turbine to different portions of a gas turbine, and would totally bypass any elements of a coal gasification system.

With all due respect, it is one thing to supply steam directly from steam turbines of a steam turbine system to different parts of a gas turbine system, and it is quite a different thing to convert steam from a steam turbine and then condense it prior to sending it out to different parts of a gas turbine system. Again, Rice discloses that steam from a low pressure steam turbine 42 is first condensed to water and then send to a boiler feed water heater 48 and to cool an exhaust portion of a power turbine, which is not a part of Rice's gas turbine system 20.

The Office Action's statement that Rice is relied upon to teach that it is known for steam to be used to cool multiple sections of the gas turbine in order to increase system efficiency is noted, but one cannot use that teaching and modify Jahnke et al. in a bizarre way in order to come up with the present invention. At best, the combined teachings of Jahnke et al. and Rice would result in providing steam directly from a steam turbine to different portions of a gas turbine system in order to cool those portions, while at the same time providing steam from a heat exchanger of a coal gasification system to the gas turbine system in order to cool it. This, with all due respect, is not what is recited in claim 1.

Furthermore, the Office Action's understanding of Jahnke et al. is in error. Jahnke et al. discloses a cooler or condenser 198 (not labeled in the Figure in Jahnke et al., but see element with input arrow 199 and output arrow 200 in the Figure), which provides water to heat exchanger 103. However, heat exchanger 103 of Jahnke et al. is a part of his Gas Turbine System, and is not a part of his Coal Gasification System. Column 11, lines 52-55

of Jahnke et al. discloses that boiler feed water make-up in line 169 is passed to heat exchanger 171 of Jahnke et al.'s coal gasification system, but the boiler feed water make-up is not supplied from Jahnke's cooler 198. Thus, claim 1 is patentable for this additional reason.

Therefore, since the other cited references do not make up for the deficiencies of the combination of Jahnke et al. and Rice, claim 1, as well as all claims that depend from claim 1, are patentable. Claim 33 recites similar features to those discussed above with respect to claim 1, and thus claim 33, as well as all claims that depend from claim 33, are patentable over the cited art of record, since Perkins et al. does not rectify the shortcomings of Rice and Jahnke et al., as discussed above.

Dependent claim 3 has been amended to recite that the higher-temperature steam is directly supplied from the heat exchanger in the coal gasification system to the gas turbine, and that the higher-temperature steam is first sent through a gas cleanup unit of the coal gasification system and then on to the gas turbine compressor. See, for example, Figure 1 of the drawings, whereby the steam output from cooler 30 is provided directly to gas turbine 34 of the gas turbine system 22, while the steam output from the cooler 30 is first applied to a gas clean-up unit 31 before it is provided to a gas turbine compressor 33 of the gas turbine system 33. Such features are not believed to be disclosed, taught or suggested by the combined teachings of the cited art of record, when taken as a whole.

Applicants respectfully submit that the application is in condition for allowance and request reconsideration.

Should the Examiner have any questions or suggestions regarding this application, the Examiner is invited to contact the undersigned attorney at the telephone number shown below.

Respectfully submitted,

June 5, 2002
Date

for Phillip J. Articola
Johnny A. Kumar
Reg. No. 34,649

Reg. No. 38,819

FOLEY & LARDNER
3000 K Street, N.W.
Suite 500
Washington, D. C. 20007-5109
Tel: (202) 672-5300

Should additional fees be necessary in connection with the filing of this paper, or if a petition for extension of time is required for timely acceptance of same, the Commissioner is hereby authorized to charge Deposit Account No. 19-0741 for any such fees; and applicant(s) hereby petition for any needed extension of time.

Version with Markings to Show Changes Made

In The Claims

1. (Three Times Amended) An integrated coal gasification combined cycle power generator (IGCC) comprising:

a coal gasification system for producing a combustible gas from coal, wherein said coal gasification system supplies said combustible gas to a gas turbine system;

said gas turbine system comprises a gas turbine for performing expansion work using said combustible gas, wherein said gas turbine supplies exhaust gas to a heat recovery system;

said heat recovery system performs heat exchange, wherein said heat recovery system uses said exhaust gas supplied from said gas turbine as a heat source, and supplies steam generated in the heat exchange to a steam turbine system;

said steam turbine system performs expansion work, said steam turbine system comprising a condenser to condense said steam from said heat recovery system into water, said water being supplied to a heat exchanger in said coal gasification system, where said water is heated to steam, and wherein said steam from said heat exchanger is supplied to more than one high-temperature section of the gas turbine system which are at a temperature higher than a temperature of said steam from said heat exchanger.

3. (Three Times Amended) An IGCC according to claim 2, wherein said more than one high-temperature section of the gas turbine system is at least said gas turbine and a gas turbine combustor,

wherein said higher-temperature steam is directly supplied from said heat exchanger in said coal gasification system to said gas turbine, and

wherein said higher-temperature steam is first sent through a gas cleanup unit of said coal gasification system and then on to said gas turbine compressor.

33. (Amended) An integrated coal gasification combined cycle power generator (IGCC) comprising:

a coal gasification system for producing a combustible gas from coal, wherein said coal gasification system supplies said combustible gas to a gas turbine system;

said gas turbine system comprises a gas turbine for performing expansion work using said combustible gas, wherein said gas turbine supplies exhaust gas to a heat recovery system;

said heat recovery system performs heat exchange, wherein said heat recovery system uses said exhaust gas supplied from said gas turbine as a heat source, and supplies steam generated in the heat exchange to a steam turbine system;

said steam turbine system performs expansion work, said steam turbine system comprising a condenser to condense said steam from said heat recovery system into water, said water being supplied to a heat exchanger in said coal gasification system, where said water is heated to steam, wherein said steam from said heat exchanger is supplied to at least one high-temperature section of the gas turbine system which is at a temperature higher than a temperature of said steam from said heat exchanger, and wherein high-pressure from an air compressor in said gas turbine system is supplied to cool the at least one high-temperature section of the gas turbine system if steam is not yet generated by said heat exchanger in said coal gasification system.

46. (Amended) An IGCC according to claim 42, wherein air generated in an air compressor in said gas turbine system is supplied to said at least one high-temperature section of the gas turbine system for the purpose of cooling [said in] said [coal gasification system] high-temperature section <u>of the gas turbine system</u>, producing a higher-temperature air, said higher-temperature air is recovered after cooling [said in] said [coal gasification system] high-temperature section <u>of the gas turbine system</u> and supplied to said heat recovery system.